CLAIMS:

1. A chimeric polypeptide comprising:

(a) a vacuole targeting sequence encoding a polypeptide; and

- (b) a sequence encoding a plant-noxious pest control protein linked in operable combination to said targeting polypeptide.
- 2. A polypeptide as claimed in claim 1 wherein the vacuole targeting polypeptide is a signal sequence polypeptide.
- 3. A polypeptide as claimed in claim 2 wherein the signal sequence polypeptide is selected from proteinase inhibitor signal sequence I or II.
- 4. A polypeptide as claimed in any one of claims 1 to 3 wherein the pest control protein is selected from binding proteins, proteinase inhibitors and degradative enzymes.
- 5. A polypeptide as claimed in claim 4 wherein the proteinase inhibitor is selected from aprotinin kunitz-type inhibitors, soybean, arrowroot, taro, proteinase inhibitors 1, proteinase inhibitor 2, alpha-1 antitrypsin, bowman-birk inhibitors from soybean and cowpea, and oryzacystatin.

polypeptide as claimed in claim 4 wherein the binding protein is selected from riboflavin, carotenoid, fatty-acid, retinol, alpha-tocopherol, folate, thiamin, pantothenate and biotin binding proteins.

- 7. A polypeptide as claimed in claim 6 wherein the biotin-binding protein is selected from avidin, streptavidin, biotin-binding antibodies and fragments thereof, biotin halocarboxylase synthetase, biotinidase and bacterial proteins.
- 8. A polypeptide as claimed in claim 7 wherein the biotin-binding protein is avidin, streptavidin or a functionally equivalent variant thereof.
- 9. A polypeptide as claimed in any one of claims 1 to 8 further comprising at least one additional sequence encoding a protein or peptide.
- 10. A polypeptide as claimed in claim 9 wherein the additional sequence encodes a further plant-noxious protein, pest control protein, or an antimicrobial, antifungal, or antiviral protein.
- 11. A polypeptide as claimed in claim 10 wherein the additional sequence encodes a pest control protein.

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- 12. A polypeptide as claimed in claim 11 wherein the pest control protein is a Bacillus thuringiensis (Bt) insecticidal protein.
- 13. A polypeptide as claimed in claim 12 wherein the Bt protein is a Cry protein.
- 14. A polypeptide as claimed in claim 13 wherein the pest control protein is a proteinase inhibitor.
- 15. A polypeptide as claimed in claim 14 wherein the proteinase inhibitor is an aprotinin.
- 16. An isolated nucleic acid molecule encoding a polypeptide as claimed in any one of claims 1 to 15.
- 17. A nucleic acid molecule as claimed in claim 16 which is a DNA molecule.
- 118. A vector comprising a DNA molecule as claimed in claim 17.
- A host cell transformed with a vector as claimed in claim 18.
 - A host cell as claimed in claim 19 which is a plant cell.
 - A method for producing a polypeptide as claimed in any one of claims 1 to 15 comprising the steps of:
- culturing a host cell which has been transformed or transfected with a vector as claimed in claim 18 to express the encoded polypeptide; and optionally
 - (b) recovering the expressed polypeptide.
 - 22. A method for producing a pest resistant plant, comprising transforming the plant genome to include at least one DNA molecule as claimed in claim 17.
 - 23. A transgenic plant that contains a DNA molecule as claimed in claims 17.
 - 24. A transgenic plant as claimed in claim 23 further comprising at least one additional DNA molecule encoding a protein or peptide.
 - 25. A transgenic plant as claimed in claim 24 wherein the additional DNA molecule encodes a further plant-noxious protein, pest control protein or an antimicrobial, antifungal or antiviral protein.
 - 26. A transgenic plant as claimed in claim 25 wherein the additional DNA molecule encodes a pest control protein.

- 27. A transgenic plant as claimed in claim 26 wherein the pest control protein is a Bacillus thuringiensis (Bt) insecticidal protein.
- 28. A transgenic plant as claimed in claim 27 wherein the Bt protein is a Cry/protein.
- 29. A transgenic plant as claimed in claim 28 wherein the pest control protein is a proteinase inhibitor.
- 30. A transgenic plant as claimed in claim 29 wherein the proteinase inhibitor is an aprotinin.
- 31. A transgenic plant expressing pesticidally effective concentrations of a chimeric polypeptide as claimed in any one of claims 1 to 15.
- 32. A method for controlling or killing pests comprising administering to said pest an amount of a chimeric polypeptide as claimed in any one of claims 1 to 15, which is effective to control or kill said pest.
- A method as claimed in claim 32 wherein the chimeric polypeptide is expressed in
 - 34. A method as claimed in claim 32 or claim 33 further comprising administering to said pest a pest control protein.
 - 35. Amethod as claimed in claim 34 wherein the pest control protein is a Bt protein.
 - 36. A method as claimed in claim 35/wherein the Bt protein is a Cry protein.
 - 37. A method of controlling or killing pests comprising administering a chimeric polypeptide as claimed in any one of claims 1 to 8 which includes a sequence encoding a pest control protein and a second pest control protein, where the combination provides more effective control than administration of the second pest control protein alone.
 - 38. A method of preventing attack, or controlling or killing pests, on a transgenic plant as claimed in any one of claims 23 to 31 comprising treating the plant with a composition comprising a pest control protein.
 - 39. A method as claimed in claim 38 wherein the pest control protein is Bt.
 - 40. A method as claimed in claim 39 wherein the Bt protein is a Cry protein.
 - 41. A method as claimed in any one of claims 38 to 40 wherein the composition is a spray.

- 42. A method as claimed in any one of claims 38 to 40 wherein the composition is a dust.
- 43. A method as claimed in any one of claims 32 to 42 wherein the pest is selected from:

cotton bollworm (Helicoverpa armigera); tropical army-worm (Spodoptera litura), also S. littoralis, S. exiguaz European corn-borer (Ostrinia nubilalis); tobacco horn worm (Manduca sexta); loopers (Chrysodiexis spp.); rice stem borer (Chilo suppressalis); porina (Wiseana spp.); cutworms (Agrotis spp.); diamondback moth (Plutella xylostella); potato tuber moth (Phthorimaea operculella); codling moth (Cydia pomonella); Indian meal moth (Plodia interpunctella): gypsy moth (Lymantria dispar); argentine stem weevil (Listronotus bonariensis); clover root weevil (Sitona lepidus); grass-grubs (Costelytra zelandica, Odontyla spp.); com rootworm (Diabrotica virgifera); rice and wheat weevils (Sitophilus spp.); mealworms (Tenebrio molitar); flbur beetles (Tribolium confusum); black field cricket (Teleogryllus/commodus); lbcusts (Locusta migratoria); \$awflies (Sirex spp., Nematus olgospilus); Western Flower thrips (Frankliniella occidentalis); Hessian flies (Mayetiola destructor); two-spotted mite (Tetranychus urticae); and

European red mite (Panonychus ulmi).

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- 44. A composition comprising a polypeptide as claimed in any one of claims 1 to 15 and a carrier, diluent, excipient or adjuvant.
- 45. A composition comprising material derived from a plant as claimed in any one of claims 23 to 31 and a carrier, diluent, excipient or adjuvant.
- 46. A composition as claimed in claim 45 wherein the carrier is an agriculturally acceptable carrier.



- 47. A composition as claimed in any one of claims 44 to 46 which is a pesticidal composition.
- 48. A composition as claimed in any one of claims 48 to 47 which further comprises one or more antifungal, antiviral, antimicrobial or pest control proteins.
- 49. A composition as claimed in claim 48 wherein the pest control protein is a Bacillus thuringiensis (Bt) insecticidal protein.
- 50. A composition as claimed in claim 49 wherein the Bt protein is a Cry protein.
- 51. A composition as claimed in claim 50 wherein the pest control protein is a proteinase inhibitor.
- A composition as claimed in claim 51 wherein the proteinase inhibitor is an aprotinin.
- 53. A method for producing a plant-noxious protein, the method comprising extracting the protein from a plant incorporating in its genome a DNA molecule as claimed in claim 17.
- 54. Seed that is the product of a plant as claimed in any one of claims 23 to 31.

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